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10/589,622

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Minoru Ohyama

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EXAMINER

FISCHER, MARK L

ART UNIT

PAPER NUMBER

2627

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DELIVERY MODE

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/589,622	Applicant(s) OHYAMA, MINORU	
	Examiner Mark Fischer	Art Unit 2627	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 June 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 14, 15 and 17-25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 14, 15 and 17-25 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 June 2009 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This Office Action is in response to the Amendment filed on June 2, 2009. Claims 1-13 and 16 are canceled, claims 14, 17, and 23 are currently amended, claims 15, 18-22, 24, and 25 are previously presented.

Claim Objections

2. Claim 1 is objected to because of the following informalities: Claim 14, line 1, “an” should be changed to --An--. Appropriate correction is required.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 14, 15, 17, 18 and 20-23 are rejected under 35 U.S.C. 102(b) as being anticipated by Shibuya (U.S. Pub. No. 2001/0053110 A1).

Regarding claim 14, Shibuya discloses an optical device for an optical pickup apparatus (Fig. 1) for recording or reproducing information with respect to an information recording medium, comprising: a substrate (surface of element 1); a hologram element (6) to diffract incident beams of first and second wavelengths (beams from 2 and 3) that are different from each other; a light receiving element arranged on the substrate and having a first light receiving region (4) to receive an incident beam of the first wavelength diffracted by the hologram element and a

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second light receiving region (5) to receive an incident beam of the second wavelength diffracted by the hologram element; an operation unit (Fig. 2B, element 23), wherein if the wavelength of an incident beam is one wavelength of either the first or second wavelengths (¶ [0049]), carries out a subtraction operation between the signal (output of 20) of the first light receiving region (4) and the signal (output of 21) of the second light receiving region (5) that receives unnecessary light scattering over the substrate including the first and second light receiving regions (both 4 and 5 have received unnecessary light as evidenced in the top and middle graphs of Fig. 4A, and further the light is over the substrate as seen in Fig. 1), removes a signal component (signal component in Fig. 4A, middle graph) representative of the unnecessary light from the signal (signal in Fig. 4A, top graph) from the first light receiving region and outputs the detection signal (signal in Fig. 4A, bottom graph) representative of the first light wavelength, if the one wavelength is the first wavelength (¶¶ [0049]-[0052]), and carries out a subtraction operation (23) between the signal of the second light receiving region (5) and the signal of the first light receiving region (4) that receives unnecessary light scattering over the substrate including the first and second light receiving regions (both 4 and 5 will receive unnecessary light as evidenced in the top and middle graphs of Fig. 4A, and further the light is over the substrate as seen in Figs. 1), removes a signal component representative of the unnecessary light (see ¶ [0049]) from the signal from the second light receiving region and outputs the detection signal representative of the second light wavelength, if the one wavelength is the second wavelength (¶¶ [0049] and [0053]).

Regarding claim 15, Shibuya discloses that the first light receiving region (4) and second light receiving region (5) have a nearly equal light receiving area (see Fig. 2A).

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Regarding claim 17, Shibuya discloses a determination means (25) for determining whether the wavelength of the incident beam is the first wavelength or the second wavelength; wherein the operation unit outputs the detection signal representative of the wavelength determined by the determination means (¶ [0044]).

Regarding claim 18, Shibuya discloses that the incident beams of the first and second wavelengths that are different from each other are main beams emitted toward the information recording medium to detect information from the information recording medium (9) and reflected by the information recording medium (see Fig. 1); and the operation unit removes the signal component representative of the unnecessary light from the signal of the one light receiving region that receives the reflected main beam diffracted by the hologram element (see Fig. 4A).

Regarding claim 20, Shibuya discloses that the hologram element is divided into first and second regions having different diffraction axes (see Fig. 2A, element 6); and each of the first and second light receiving regions has a light receiving region to receive a diffracted beam from the first region of the hologram element and a light receiving region to receive a diffracted beam from the second region of the hologram element (see Fig. 2A).

Regarding claim 21, Shibuya discloses that the first wavelength is in a 650-nm band and the second wavelength is in a 780-nm band (¶ [0039]).

Regarding claim 22, Shibuya discloses that at least one of a first light source (2) for emitting light of the first wavelength and a second light source (3) for emitting light of the second wavelength is arranged on the substrate (Fig. 1, element 1).

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Regarding claim 23, Shibuya discloses a first light source (2) for emitting light of the first wavelength; and a second light source (3) for emitting light of the second wavelength.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

7. Claims 19, 24, and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shibuya in view of Fukakusa et al. (U.S. Pat. No. 6,556,533 B1, hereinafter Fukakusa).

Regarding claim 19, Shibuya discloses that the incident beams of the first and second wavelength that are different from each other are emitted toward the information recording medium (9) to carry out a tracking operation of a track on the information recording medium (see Fig. 2B) and reflected by the information recording medium; and the operation unit removes the signal component representative of the unnecessary light from the signal of the one light receiving region that receives the reflected beam diffracted by the hologram element (see Fig.

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4A). Shibuya does not explicitly disclose that the incident beams are sub-beams. However, Fukakusa discloses the use of sub-beams for tracking control in a system. It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Shibuya with Fukakusa to implement the invention of Shibuya, but also to modify the beams of Shibuya to include sub-beams with the motivation to create tracking control with a sub-beam method in which the unnecessary light of sub-beams can be removed so that a better tracking signal using the sub-beam method can be obtained.

Regarding claim 24, Shibuya does not explicitly disclose a first diffraction grating to divide light of the first wavelength from the first light source into a main beam and two sub-beams; and a second diffraction grating arranged in the optical device, to divide light of the second wavelength from the second light source into a main beam and two sub-beams.

However, Fukakusa discloses a first diffraction grating (element 28 in Fig. 7 of element 1 in Fig. 1) to divide light of the first wavelength from the first light source into a main beam and two sub-beams; and a second diffraction grating (element 28 in Fig. 7 of element 11 in Fig. 1) arranged in the optical device, to divide light of the second wavelength from the second light source into a main beam and two sub-beams. It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Shibuya with Fukakusa to implement the invention of Shibuya, but also to modify the beams of Shibuya to include sub-beams with the motivation to create tracking control with a sub-beam method in which the unnecessary light of sub-beams can be removed so that a better tracking signal using the sub-beam method can be obtained.

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Regarding claim 25, Shibuya does not explicitly disclose a first diffraction grating arranged in the optical device, to divide light of the first wavelength from the first light source into a main beam and two sub-beams; and a second diffraction grating to divide light of the second wavelength from the second light source into a main beam and two sub-beams. However, Fukakusa discloses a first diffraction grating (element 28 in Fig. 7 of element 1 in Fig. 1) arranged in the optical device, to divide light of the first wavelength from the first light source into a main beam and two sub-beams; and a second diffraction grating (element 28 in Fig. 7 of element 11 in Fig. 1) to divide light of the second wavelength from the second light source into a main beam and two sub-beams. It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Shibuya with Fukakusa to implement the invention of Shibuya, but also to modify the beams of Shibuya to include sub-beams with the motivation to create tracking control with a sub-beam method in which the unnecessary light of sub-beams can be removed so that a better tracking signal using the sub-beam method can be obtained.

Response to Arguments

8. Applicant's arguments filed June 2, 2009 have been fully considered but they are not persuasive.

Applicant argues that Shibuya fails to disclose that one of the light sources is activated whereas the other of the light sources is not. However, this limitation has not been incorporated into the claims in a clear enough manner as to overcome the cited prior art references. For example, "wherein if the wavelength of an incident beam is one wavelength of either the first or

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second wavelengths” (claim 14, lines 10-11) does not mention that one of the light sources is not activated, and thus leaves open the possibility for another incident beam of the other wavelength to still be present. Further, “if the one wavelength is the first wavelength” (claim 14, line 16) and “if the one wavelength is the second wavelength” (claim 14, line 21) can be interpreted such that the “one wavelength” is the wavelength being used for recording/reproducing on a specific disc (Shibuya, ¶¶ [0050] and [0053]) while the claim language still leaves open the possibility for another wavelength to be present.

Applicant argues that with two simultaneously activated light sources the offset due to the signal components of the unnecessary light reflected from the layer that is not used for recording or playing also cannot be cancelled. However, this limitation has not been clearly incorporated into the claim. For example, "removes a signal component representative of the unnecessary light from the signal from the first light receiving region" (claim 14, lines 14-15) is disclosed in Shibuya because the top graph of Fig. 4A which shows the signal from the first light receiving region, shows that there is unnecessary light (DC_1) in the signal (note that since "unnecessary light" has not been clearly defined in the claim, it can be interpreted as the unfavorable signal component of DC_1). Further, the middle graph of Fig. 4A shows that unnecessary light is also present on the second light receiving region.

Conclusion

9. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

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A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mark Fischer whose telephone number is (571) 270-3549. The examiner can normally be reached on Monday-Friday from 9:00AM to 6:30PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hoa Nguyen can be reached on (571) 272-7579. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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/Mark Fischer/

Examiner, Art Unit 2627

7/17/2009

/HOA T NGUYEN/

Supervisory Patent Examiner, Art Unit 2627